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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,365	03/18/2004	Patrick Brant	2003B044/2	7914

7590 12/22/2005  
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EXAMINER

LEE, RIP A

ART UNIT PAPER NUMBER

1713

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/803,365

Applicant(s)

BRANT, PATRICK

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☒ Claim(s) 1, 5, 11 and 15-22 is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03-18-2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-20-04; 03-18-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-28, drawn to a process for preparing propylene copolymer, classified in class 526, subclass 160.
  - II. Claim 29, drawn to a propylene copolymer, classified in class 528, subclass 396.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not related as there is no linking or common special technical feature. Whereas one invention is drawn to a general process of making propylene copolymer, the second invention is drawn to a copolymer which is not claimed to be made by the process of invention I.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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6. During a telephone conversation with Catherine Bell on December 13, 2005, a provisional election was made with traverse to prosecute the invention of group I, claims 1-28. Affirmation of this election must be made by applicant in replying to this Office action. Claim 29 has been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Objections***

7. Claims 1 and 11 are objected to because of the following informalities: It is not clear what types of olefin (*i.e.*, alpha olefin, cyclic olefin, *etc.*) lie in the scope of the recitation "C<sub>4</sub>-C<sub>10</sub>." Appropriate correction is required.

8. Claims 1 (page 38) and 11 (page 41) are objected to because of the following informalities: The structures R<sup>14</sup>-M<sup>2</sup>-R<sup>15</sup> and are R<sup>14</sup>-M<sup>2</sup>-R<sup>15</sup> identical because M<sup>2</sup> is defined as carbon in a later line of the claim (claim 1, see page 38, line 16; claim 41, see page 41, line 10). Appropriate correction is required

9. Claims 5 and 15 are objected to because of the following informalities: Group R<sup>8</sup> can not be a hydrogen atom. Appropriate correction is required.

10. Claims 11 and 15-22 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 1 and 5-21. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Whereas claim 1 is drawn to a process for propylene copolymer, claim 11 is drawn to a process for propylene copolymer composition. The remainder of the claims is identical. As there is nothing in the claims that delineates the propylene copolymer from the copolymer composition, there appears to be no difference in the claims, and thus, the two sets of claims are drawn to essentially the same process.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1-7, 9-11, 15-17, and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Galimberti *et al.* (*Macromolecules*, 1999).

Galimberti *et al.* teaches use of *rac*-Et(4,7-Me<sub>2</sub>-Ind)ZrCl<sub>2</sub> as a catalyst component in a process for making a copolymer containing units derived from propylene and ethylene (Table 1, entries 12-16). The active species is generally considered to be *rac*-Et(4,7-Me<sub>2</sub>-Ind)ZrL<sup>+</sup>, and there is no indication in the reference that secondary species are present in the reaction system. Copolymerizations are conducted in a single vessel, and a monomer mixture is introduced to the catalyst system (page 7975, col. 1, line 11).

15. Claims 1-13, and 15-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Winter *et al.* (U.S. 5,304,614).

Winter *et al.* discloses a process of copolymerization of olefin in the presence of a catalyst comprising transition metal complexes *rac*-Et(4,7-Me<sub>2</sub>-Ind)ZrCl<sub>2</sub>, *rac*-Et(2,4,7-Me<sub>3</sub>-Ind)ZrCl<sub>2</sub>, and *rac*-1,2-butanediyl(4,7-Me<sub>2</sub>-Ind)ZrCl<sub>2</sub> (claim 4). Example 19 shows that the copolymerization of propylene and ethylene, with the resulting polymer containing predominantly (96.9 %) propylene units, is clearly within the scope of the claims of the patent. Thus, one of ordinary skill in the art would immediately envision a process in which propylene and ethylene is polymerized in the presence of the catalyst components recited in claim 4 of Winter *et al.*

16. Claims 1-7, 9-11, 15-17, and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Herrmann *et al.* (U.S. 6,143,846).

Example 6 of Herrmann *et al.* shows preparation of propylene-ethylene copolymer in the presence of a catalyst comprising Et(4,7-Me<sub>2</sub>-Ind)ZrCl<sub>2</sub> as the metal component. The polymer is comprised predominantly of units derived from propylene (30 kg propylene and 0.8 bar of ethylene used in the monomer feed). According to the inventors, the amount of comonomer lies in the range of 0-20 wt % (col. 4, line 62).

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winter *et al.*

The discussion of the prior art of Winter *et al.* from paragraph 14 of this office action is incorporated here by reference. The reference does not show a compound bearing a bridging group having the structural features outlined in the claim, however, one of ordinary skill in the art would have found it obvious to arrive at the subject matter of claim 14 based on the teachings in Winter *et al.* that bridging groups  $-R^{11}-M^2-R^{12}-$  and  $-R^{11}-M^2-R^{12}-(CR_2^{13})-$  have groups  $R^{11}$ ,  $R^{12}$ , and  $R^{13}$  that are a  $C_1$ - $C_4$  alkyl group (col. 3, lines 20-38). It would have been obvious to one having ordinary skill in the art to arrive at the subject of the instant claim because such an embodiment is disclosed in the patent.

20. Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winter *et al.* or Herrmann *et al.*

The discussion of the disclosures of the prior art of from paragraphs 14 and 15 of this office action is incorporated here by reference. The reference is silent with respect to the physical property (elution profile data *via* GPC-DRI) recited in claim 23. However, a reasonable basis exists to believe that the copolymers of the prior art exhibit the claimed property, especially in view of the fact that the processes disclosed in both prior art are essentially the same as that recited in the instant claims. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

21. Claims 1-4, 6-14, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida *et al.* (U.S. 6,794,476).

Machida *et al.* teaches a process of copolymerization of propylene with ethylene at a comonomer content of 0.05 to 60 mole % (Col. 6, lines 34-40). The inventors contemplate use of a catalyst comprising a transition metal component such as isopropylidene(4,7-dimethylindenyl)(4,7-diisopropylindenyl)HfCl<sub>2</sub> (col. 12, line 50). The reference does not show an example of said propylene-ethylene copolymerization using this particular catalyst component, however, it would have been obvious to one having ordinary skill in the art to arrive at the subject matter of the claims because such an embodiment is clearly contemplated and in the disclosure of the prior art.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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December 14, 2005



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